Texas Water Development Board

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TO: Board Members

THROUGH: Kevin Patteson, Executive Administrator
Robert E. Mace, Ph.D., P.G., Deputy Executive Administrator
Water Science and Conservation

FROM: Mindy Conyers, Ph.D., Conservation and Innovative Water Technologies

DATE: April 22, 2015

SUBJECT: 2014 Texas Rain Catcher Awards

ACTION REQUESTED

Consider approving the 2014 Texas Rain Catcher Awards

BACKGROUND

On July 16, 2007, the Texas Water Development Board (TWDB) authorized the Executive Administrator to establish and implement the Texas Rain Catcher Award competition and recognition program. The program, a first-of-its-kind in Texas, was established to promote rainwater harvesting in the state, educate the public about the benefits and advantages of rainwater harvesting, and recognize individuals and entities dedicated to conserving our precious water resources. The competition is open to all individuals, companies, organizations, municipalities, and other local and state governmental entities in Texas, except current TWDB employees and Board members. Winners are chosen by a panel of judges consisting of TWDB staff.

As the state's lead agency for rainwater harvesting, TWDB provides information and education to the public on all aspects of rainwater harvesting through our website and with printed materials. For example, The Texas Manual on Rainwater Harvesting (3rd edition, 2005), a popular guide published by the TWDB, provides an introduction to rainwater harvesting and to designing residential and small-scale commercial systems. TWDB is also required to make rainwater harvesting training available to permitting staff of certain cities and counties. Depending on the availability of funds, the TWDB provides limited financial support (grants) for rainwater harvesting research studies.

Since the inception of the Texas Rain Catcher Award program in 2007, TWDB has recognized 27 entities and one individual. In 2013, the awardees were Bandera High School; the City of

Pflugerville; the San Saba Senior Center; and the WaterSense® House at the Texas A&M AgriLife Research and Extension Center in Dallas.

KEY ISSUES

For the 2014 Texas Rain Catcher Award, one awardee is proposed for each of the following categories.

Community: City of Austin's Twin Oaks Library
At the Twin Oaks Library, the City of Austin, in collaboration with Water Environment Research Foundation and Geosyntec Consultants, installed an internet-enabled real-time controller to optimize the water conservation and stormwater runoff reduction benefits of an existing rainwater harvesting system. The library's 5,000-gallon rainwater harvesting system was initially installed in 2010 to educate the public about the benefits of stormwater management and to conserve potable water by providing captured rainwater and air conditioner condensate to an on-site landscape irrigation system. The retrofit was part of a pilot study to demonstrate the technology as an innovative and improved approach for rainwater harvesting system management.

The goal of the retrofit was to improve water conservation for the on-site landscape irrigation system, improve the capture efficiency of the system, and reduce stormwater runoff from the library site by installing a new rain garden. Geosyntec Consultants installed a water-level sensor, an actuated valve, and an internet-enabled real-time controller with customized algorithms to integrate system controls with real-time weather forecasts. To improve water conservation during dry periods, irrigation volume is automatically reduced when the cisterns are less than half full. In advance of forecasted storm events with a probability greater than 60 percent, the cisterns are automatically drained as needed to increase available storage capacity for the forecasted runoff volume. Water drained from the tanks prior to storm events is directed to the irrigation system and an on-site rain garden. The retrofit of the rainwater harvesting system at the Twin Oaks Library demonstrates the applicability and benefits of the internet-enabled real-time control system technology, a cost-effective measure for water conservation and stormwater runoff reduction.

Commercial: Oohla Bean
Oohla Bean, a bed and breakfast and event center in Driftwood, was built with rainwater harvesting in mind. Hamilton & Associates, an Austin based architectural, engineering, and technical services firm, designed the facilities in a unique Hill Country-modern style. The roof structures on the individual suites and buildings are constructed in a butterfly style so that rainwater collects in a center gutter before being routed to the edge of the buildings. From there, the rainwater drains into several architecturally decorative columns that are connected to the rainwater collection piping system.

The system includes a 65,000-gallon corrugated metal tank, over 1,000 feet of piping, a first-flush diversion system, a floating filter inside the tank, and a 3 horsepower pump system along with a filtration and disinfection system. This rainwater harvesting system is designed to supply all the potable water needs of guests at Oohla Bean and should be self-sufficient during most years of rainfall in central Texas. Because the property already had a well on it, building a

rainwater harvesting system for potable supply did not necessarily save the owner money. It does, however, save the dwindling groundwater resources available to the growing population in the Texas Hill Country.

Nonprofit: Leadership Montgomery County Class of 2014
Leadership Montgomery County is a nonprofit organization dedicated to developing and enhancing current and future leaders representing myriad local businesses. Each class selects a project that addresses a community need. The Class of 2014 decided to promote water conservation through a rainwater harvesting project. The goals of the project included teaching class members how to install a rainwater collection system; building real-world, working examples of various types of collection systems to educate the public and leave a legacy for future generations; and encouraging other businesses and community centers to follow suit. The class also created a public-private partnership with the Lone Star Groundwater Conservation District, which hosts the online portion of "Harvesting the Rain".

Using direct and in-kind donations, rainwater harvesting systems and educational signage were installed at three locations across the county. Oak Ridge Elementary School's 500 gallon steel collection tank's playful design features the school's mascot on the front. The school has an educational garden, where students experience hands-on learning and use the collected rainwater to irrigate their plants. Bear Branch Sports Fields now has a 1,000 gallon poly-mart collection tank with an aesthetic façade, steel gutters, and irrigation pump tied into the existing system, located near the concession stand and restrooms, making it highly visible to the more than 200,000 annual visitors. The North Montgomery County Community Center is a multi-purpose facility with a 1,000-gallon steel collection tank painted to match the building, an irrigation pump tied into the existing system, and an expansive garden with drip irrigation and native and drought-tolerant plants. Each of the three sites includes numerous educational signs describing the project and encouraging wise water use and water conservation practices. The Class of 2014 also made community engagement and outreach a priority with one member even going so far as to build a working rainwater harvesting model which was then donated for use in educational presentations.

Educational: RainDrop Harvesting Solutions
Founded in 2013, RainDrop Harvesting Solutions educates the public and brings the latest technologies in water conservation to the Brazos Valley. After attending a course taught by Mr. Billy Kniffen, the only individual ever to receive the Texas Rain Catcher Award, Kathie Hitt was inspired to share what she learned with coworker Henry Luna. Their mutual passion for designing and building rainwater harvesting systems, and for sharing their knowledge with others, fueled the desire to start their own company.

RainDrop Harvesting Solutions uses a mobile demonstration unit to spread the word about water conservation and rainwater collection. Though the look of their model has evolved over time, the goal has always been to educate kids and adults alike about water conservation and rainwater harvesting in a fun and memorable way. The demo uses an electric pump to recirculate rainwater through each component of the system: the rain falls onto the metal roof, collects in a gutter, and is conveyed to the tank via a downspout and first flush diverter. Other unique features to increase interest and interaction with the public include clear polyvinyl chloride for the first flush diverter and coating the tank with chalkboard paint so children can write or draw on it. The portability of

their demonstration tool allows them to travel to schools and events throughout the Brazos Valley and beyond spreading the word about water conservation.

Government: Texas Department of Transportation
The Hill County Safety Rest Areas, located on both sides of Interstate 35 about five miles south of Hillsboro, each include a rainwater harvesting system. In addition to providing supplemental water for landscape irrigation, the systems educate the public on rainwater harvesting and water conservation, entice drivers to take a break from the road due to their unique architecture, and promote and celebrate the region's agricultural heritage. The Texas Department of Transportation designed two identical systems where daily traffic surpasses 60,000 vehicles, likely making these facilities the busiest in the state.

At the front building entrance, a large metal funnel catches rainwater from the rooftops and then an aqueduct that also doubles as a "Welcome" gateway carries this rainwater over the sidewalk. The water then falls into a metal sculpture before being routed into a 20,000 gallon underground collection tank. The stored rainwater is then pumped to irrigate landscaped areas within the building's front entrance plaza that, in keeping with the facility's agrarian theme, features parallel bands of planted beds that resemble row crops. An interpretive sign located in the plaza explains the facility's water conservation efforts and highlights the importance of native grasses and wildflowers. The Hill County Safety Rest Areas, located on the Texas leg of the "Prairie Passage", a national wildflower corridor stretching from the Canadian border to Mexico, encourage all visitors to conserve water and to consider harvesting rainwater wherever they live.

RECOMMENDATION

The Executive Administrator recommends that the Board approve the awardees of the 2014 Texas Rain Catcher Awards.

This recommendation has been reviewed by legal counsel and is in compliance with applicable statutes and Board rules.

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Les Trobman
General Counsel

Attachment(s): none